AMENDMENTS IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An insulating film-forming apparatus, comprising:

a substrate process section for ~~applying a prescribed processing to a substrate for~~ forming an insulating film on the substrate;

a substrate transfer section for transferring the substrate from the outside into the substrate process section; and

a substrate transfer mechanism for transferring the substrate between the substrate process section and the substrate transfer section[[;]],

~~wherein:~~

the substrate process section includes a process tower comprising plural process units stacked one ~~upon~~ above the other for performing a series of ~~processing~~ processes for forming an insulating film on the substrate, said ~~plural~~ plurality of process units including a coating unit for coating the substrate with a chemical liquid containing a material of the insulating film so as to form a coating film, a temperature control unit for controlling the substrate after coating with the chemical liquid at a prescribed temperature and a heating unit for heating the substrate having the coating film formed thereon[[;]],

the process tower is detachable from the substrate process section,

each of the plural process units is housed in a casing,

the process tower includes a housing which has a plurality of levels for detachably accommodating the casings of the process units,

the casing of the temperature control unit is set in the housing at a level below the casing of the heating unit, and the casing of the coating unit is set in the housing at a level below the casing of the temperature control ~~heating~~ unit,

the casing of the heating unit, the casing of the temperature control unit and the casing of the coating unit are arranged with an air passageway interposed therebetween within the housing so as to achieve heat insulation therebetween,

an air blowing mechanism is connected to the coating unit and configured to blow air having a controlled temperature and humidity into the coating unit so as to control the temperature and humidity of the coating unit,

the casing of the coating unit is constructed to cause the air blown from the air blowing mechanism into the coating unit to be exhausted from the coating unit into the air passageway, ~~and~~

the air passageway is connected to an exhaust device through an exhaust port formed on the housing of the process tower and located above the casing of the heating unit, and

the insulating film-forming apparatus is designed such that the air blown from the air blowing mechanism is continuously forced by the exhaust device to pass ~~passes~~ through the coating unit and ~~flows~~ flow upward into the air passageway, then flow upward through a portion of the air passageway around the casing of the temperature control unit and a portion of the air passageway around the casing of the heating unit, in this order, and ~~is~~ then ~~exhausted to~~ exhaust at the exhaust device ~~through the air passageway~~.

2-5. (Canceled)

6. (Original) The insulating film-forming apparatus according to claim 1, wherein:

the substrate transfer section includes a table on which is disposed a carrier housing a plurality of substrates;

the substrate process section includes a transfer unit on which the substrate is temporarily disposed; and

the substrate transfer mechanism includes: a first transfer device arranged in the substrate transfer section for transferring the substrate between the table and the transfer unit; and a second transfer device arranged in the substrate process section for transferring the substrate between the transfer unit and the plural process units.

7. (Canceled)

8. (Original) The insulating film-forming apparatus according to claim 1, wherein the substrate process section includes a plurality of process towers.

9. (Previously Presented) The insulating film-forming apparatus according to claim 8, wherein each of the plural process towers includes a plurality of process units for forming an insulating film, the plural process towers forming the same kind of insulating film.

10. (Original) The insulating film-forming apparatus according to claim 8, wherein at least one of the plural process towers includes a plurality of process units for forming an insulating film differing in kind from the insulating film formed in another process tower.

11. (Original) The insulating film-forming apparatus according to claim 8, wherein a first insulating film is formed on the substrate in one of the plural process towers, and a second insulating film is formed on the first insulating film in another process tower.

12. (Original) The insulating film-forming apparatus according to claim 1, comprising a plurality of substrate process sections, wherein at least one substrate process section is detachable from the other substrate process sections.

13-16. (Canceled)

17. (Original) The insulating film-forming apparatus according to claim 6, further comprising a curing unit arranged in a position adjacent to the substrate process section so as to permit the substrate to be transferred into and out of the curing unit by the second substrate transfer device, said curing unit serving to apply a curing processing to the insulating film after the heat processing applied by the heating unit.

18. (Original) The insulating film-forming apparatus according to claim 17, comprising a plurality of curing units, which are arranged in a position adjacent to the substrate process

section and stacked one upon the other so as to form a tower.

19. (Canceled)

20. (Original) The insulating film-forming apparatus according to claim 1, wherein the coating unit comprises:

a coating process section having a substrate holding mechanism for holding the substrate substantially horizontal, a chemical liquid supply nozzle for supplying a chemical liquid onto the substrate held by the substrate holding mechanism, and a cup surrounding the side surface of the substrate held by the substrate holding mechanism and equipped with a exhaust port of the chemical liquid formed at the bottom; and

a waste liquid recovery section arranged below the coating process section and having a waste liquid tank for storing the waste liquid exhausted from the exhaust port and with a waste liquid passageway for introducing the waste liquid exhausted from the exhaust port into the waste liquid tank.

21. (Original) The insulating film-forming apparatus according to claim 20, wherein: the waste liquid recovery section further comprises a chemical liquid tank storing the chemical liquid used in the coating process section; and the coating process section further comprises a pump for supplying the chemical liquid from the chemical liquid tank into the chemical liquid supply nozzle.

22. (Original) The insulating film-forming apparatus according to claim 20, wherein the waste liquid recovery section further comprises a chemical liquid tank storing the chemical liquid used in the coating process section, and a pump arranged sideward of the chemical liquid tank for supplying the chemical liquid from the chemical liquid tank into the chemical liquid supply nozzle.

23. (Original) The insulating film-forming apparatus according to claim 20, wherein the waste liquid recovery section further comprises a chemical liquid tank storing the chemical

liquid used in the coating process section, and a pump arranged on the upper side of the chemical liquid tank for supplying the chemical liquid from the chemical liquid tank into the chemical liquid supply nozzle.

24-26. (Canceled)

27. (Previously Presented) The insulating film-forming apparatus according to claim 1, wherein a casing containing a film thickness measuring unit configured to measure a thickness of the insulating film is set in the housing at a position between the casing of the coating unit and the casing of the heating unit, so as to achieve heat insulation therebetween.

28-29. (Canceled)

30. (New) The insulating film-forming apparatus according to claim 1, wherein the heating unit comprises a low temperature heating unit for drying the coating film and a baking unit for baking the coating film, in which the casing of the low temperature heating unit is set in the housing at a level below the casing of the baking unit with part of the air passageway interposed therebetween to achieve heat insulation therebetween.

31. (New) An insulating film-forming apparatus comprising:

a substrate process section for applying a prescribed processing to a substrate for forming an insulating film on the substrate;

a substrate transfer section for transferring the substrate from the outside into the substrate process section; and

a substrate transfer mechanism for transferring the substrate between the substrate process section and the substrate transfer section, wherein

the substrate process section includes a process tower comprising a plurality of process units stacked one above the other for performing a series of processing steps for forming an insulating film on the substrate, said plurality of process units including a coating unit for coating

the substrate with a chemical liquid containing a material of the insulating film to form a coating film and a heating unit for heating the substrate having the coating film formed thereon,

the process tower is detachable from the substrate process section,

each of the plurality of process units is housed in a casing, in which the process tower includes a housing which has a plurality of levels for detachably accommodating the casings of the process units,

the casing of the coating unit is set in the housing at a level below the casing of the heating unit, and a casing containing a film thickness measuring unit configured to measure a thickness of the insulating film is set in the housing at a position between the casing of the coating unit and the casing of the heating unit to achieve heat insulation therebetween,

the casing of the heating unit, the casing of the film thickness measuring unit and the casing of the coating unit are arranged with an air passageway interposed therebetween, within the housing, to achieve heat insulation therebetween,

an air blowing mechanism is connected to the coating unit and configured to blow air having a controlled temperature and humidity into the coating unit to control the temperature and humidity of the coating unit,

the casing of the coating unit is constructed to cause the air blown from the air blowing mechanism into the coating unit to be exhausted from the coating unit into a portion of the air passageway below the bottom of the casing of the film thickness measuring unit,

the air passageway is connected to an exhaust device through an exhaust port formed on the housing of the process tower and located above the casing of the heating unit, and

the insulating film-forming apparatus is designed such that the air blown from the air blowing mechanism is continuously forced by the exhaust device to pass through the coating unit and flow upward into the air passageway, then to flow upward through a portion of the air passageway around the casing of the film thickness measuring unit and a portion of the air passageway around the casing of the heating unit, in this order, and then be exhausted to the exhaust device.

32. (New) An insulating film-forming apparatus comprising:

a process tower comprising a plurality of process units including a coating unit for coating a substrate with a coating liquid containing a material of an insulating film, a temperature

control unit for controlling the substrate after coating with the coating liquid at a prescribed temperature and a heating unit for heating the substrate having the coating liquid applied thereon, in which the coating unit, the temperature control unit and the heating unit are stacked one above the other in the following order:

a waste liquid tank disposed below the coating unit, for storing waste liquid exhausted from the coating unit;

a substrate transfer section for transferring the substrate from outside;

a substrate transfer mechanism for transferring the substrate between the substrate transfer section and the process units of the process tower;

a coating liquid tank disposed below the coating unit, for storing the coating liquid; and

a pump disposed below the coating unit or on a lateral side thereof, for supplying the coating liquid from the coating liquid tank into a supply nozzle,

wherein the coating unit comprises a substrate holding mechanism for holding the substrate substantially horizontal, a nozzle for supplying a coating liquid onto the substrate, a cup for surrounding the substrate held by the substrate holding mechanism to prevent the coating liquid from being scattered outside, and a waste liquid passageway having an upper end connected to the cup and a lower end connected to the waste liquid tank and including no horizontal portion, and

the process tower comprises a housing wall that surrounds the process units and sets the process units one by one and an air passageway formed inside the wall at least in an area where the temperature control unit and the heating unit are present, the air passageway supplied with a gas for heat insulation flowing therethrough to achieve heat insulation between the process units.

33. (New) The insulating film-forming apparatus according to claim 32, wherein the insulating film-forming apparatus is structured such that air having a controlled temperature is supplied into the coating unit to control the temperature inside the coating unit and exhausted from the coating unit into the air passageway of the process tower.

34. (New) The insulating film-forming apparatus according to claim 32, wherein the process units include a curing unit disposed above the heating unit, for applying a curing process to the insulating film.